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EXAMINER

BRUCKART, BENJAMIN R

ART UNIT	PAPER NUMBER
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2155

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 09/710,646	Applicant(s) FAKHOURI ET AL.	
	Examiner Benjamin R. Bruckart	Art Unit 2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Claims 21-27 are pending in this Office Action.

Claims 21, 25-26 are amended.

Claim 27 is new.

The objections to claims 21, 25 and 26 are withdrawn in light of the amendments.

Response to Arguments

Applicant's arguments filed in the amendment filed 2/22/07, are not persuasive. The reasons are set forth below.

Applicant's invention as claimed:

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 21-25 and 26-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 21, 25 and 26 recite in a 'systematic manner' twice in the third limitation and sixth limitation of the independent. It is unclear how a systematic manner distinguishes itself from any manner. Applicant needs to provide details how a systematic manner is performed.

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Claim 27 is rejected for lack of antecedent basis. It is unclear whether “said task” and “the task” refers to “a preprocessor task” or if a task is different from a preprocessor task. The second to last limitation in claim 27 states “both the post processor task and the optimizer task...” How can a task be put in both, when the optimizer task is moved to the postprocessor task, does that mean there are two? The examiner does not understand why postprocessor and post processor are one and two words at different points of the claim. Claim 27 also reads “the individual tasks” have an associated entry method. How is it associated? Does this “individual tasks” refer to only the ‘post processor’ and ‘optimizer’ or all tasks even ‘preprocessor.’

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 21-24, 25 and 26 are rejected under 102(e) as being anticipated by U.S. Patent No. 6,178,529 by Short et al.

Regarding claim 21, a method of managing a cluster of networked resources using rule-based constraints in a scalable clustering environment (Short: col. 5, lines 46- col. 6, line 9; resources have dependencies and are managed), the method comprising the steps of:

building a globally optimal configuration of said cluster of resources (Short: col. 5, lines 46- col. 6, line 9; col. 7, lines 38-54; Short teaches storing configuration data by logging into a database), wherein each of the resources has an availability and quality of service, and the

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availabilities and quality of services of the resources are determined by the dependencies among the resources, user preferences, constraints on the resources, events, and network policies (Short: col. 6, lines 28-45 teaches availability... online, offline, paused. Col. 8, lines 42-50 teaches quality associated with the service as failed or online [available]),

bringing said cluster of resources on-line in a systematic manner (Short: col. 5, lines 46-53; startup/initialization; col. 6, lines 46-65), current states of said resources and resource groups, and said dependences, preferences, constraints, events, and policies, (Short: col. 5, lines 23-53),

determining dynamic dependencies of and configuration information about said cluster of resources, including determining said dependencies and configuration information (i) at cluster initialization (Short: col. 5, lines 46-53; startup/initialization; col. 6, lines 46-65) and (ii) dynamically during cluster operation (Short: col. 7, lines 13-53), supporting startup and shutdown of said cluster of resources according to current policies, and system events (Short: col. 5, lines 46-53; startup/restart/failover),

separating said dependencies, preferences, constraints, events, and policies into (i) a first rules based group (Short: col. 5, lines 46- col. 6, line 9) and (ii) a second dynamically changing events based group (Short: col. 6, lines 28-45), and

combining said first and second groups only when needed to build the said optimal configuration (Short: col. 5, lines 22-36).

Claims 25 and 26 are rejected under the same grounds of above as being substantially similar.

Regarding claim 22, a method according to Claim 21, comprising the further steps of: continuously monitoring cluster-wide events and comparing the current cluster state with a desired state (Short: col. 5, lines 23-40), and whenever there is a discrepancy between said current and desired states, realigning the cluster resources, including the step of issuing commands to the cluster resources to bring about the realigning (Short: col. 5, lines 23-45);

providing a group of cluster services, including:

i) a persistent cluster registry to store and retrieve the configuration of the cluster resources (Short: col. 5, lines 23-45; database manager),

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- ii) topology services for detecting node and communication adapter failures (Short: col. 5, line 66- col. 6, line 10; resource monitor),
- iii) messaging for selected communications between a central resource and all other resources (Short: col. 4, lines 55- col. 5, line 10), and
- iv) a group services facility for electing one of the resources as the central resource at cluster initialization and whenever an existing central resource is unable to provide the services thereof (Short: col. 4, lines 32-53; col. 6, line 66- col. 7, line 12),

delivering events to a coordinator, said coordinator combining said events with said rules and objectives to arrive at a response to said events (Short: col. 6, lines 10-20; col. 5, lines 46-65; the coordinator=resource manager);

translating the response into commands to the resources each of the commands containing all the state needed for execution of the command by a manager of one of the resources, including the step of issuing the commands in a partial order given by said dependencies (Short: col. 5, lines 46-65); and

not sending out a new command until the leader resource is aware of a positive outcome of the commands that the execution of said new command depends on (Short: col. 5, lines 11-22; col. 7, lines 38-53; membership verification).

Regarding claim 23, a method according to Claim 22, wherein:

said coordinator ensures that globally-optimal solutions get deployed in the cluster in response to events in the cluster (Short: col. 5, lines 23- col. 6, line 10); and

all events and command feedback are directed to said coordinator (Short: col. 5, lines 66- col. 6, line 10).

Regarding claim 24, a method according to Claim 21, comprising the further steps of:

providing an optimizer module for computing a globally optimal solution based on said constraints and to current state of the cluster (Short: col. 5, lines 23-65);

using the optimizer for re-computing the globally optimal solution whenever an objective value of a deployed solution is below a certain value as compared to a proposed solution, including the step of feeding back to the optimizer an artificially generated event that forces the

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optimizer to re-compute the global solution (Short: col. 6, lines 28-45; col. 7, lines 55- col. 8, line 11);

providing the optimizer with a snapshot of the current state of the cluster (Short: col. 5, lines 23-45);

wherein the step of using the optimizer for re-computing the globally optimal solution includes the step of said optimizer, given said snapshot, proposing an approximately optimal cluster configuration that takes into account said current state of the cluster and long-term objectives defined for the cluster (Short: col. 5, lines 23- col. 6, line 10; desired configuration).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claim 27 is rejected under 103(a) as being unpatentable by U.S. Patent No. 6,178,529 by Short et al in view of U.S. Patent No. 5,761,506 by Angle et al.

Regarding claim 27, the Short reference teaches a method according to Claim 24.

The Short reference fails to state queues.

However, the Angle reference teaches a preprocessor module and a post-processor module (Angle: Fig. 1; col. 6, lines 3-14, 52-63);

the preprocessor module includes a preprocessor entry queue, the optimizer module includes an optimizer input queue, and the postprocessor module includes a postprocessor input queue (Angle: col. 10, lines 41-46);

a decision to do a resource reallocation results in the creation of a preprocessor task that is deposited in the entry queue of the preprocessor module (Angle: col. 5, lines 55-63); and

wherein said task is an object having an entry method that, when invoked, results in the task being executed (Angle: col. 6, lines 14-30), and execution of the task results in either a postprocessor task being deposited in the post-processor input queue, an optimizer task being deposited in the optimizer input queue, or both (Angle: col. 6, lines 34-63);

both the post processor task and the optimizer task are scheduled by an invocation of the entry method associated with the individual tasks (Angle: col. 6, lines 34-63); and

execution of the task results in a postprocessor task being deposited in the postprocessor input queue (Angle: col. 11, lines 34-52) in order to efficiently optimize the processing of multiple processes (Angle: col. 1, lines 50-65)

It would have been obvious at the time of the invention to one of ordinary skill in the art to create the method according to Short to include the queues and execution as taught by Angle in order to efficiently optimize the processing of multiple processes (Angle: col. 1, lines 50-65).

REMARKS

Applicant has made amendments to claims 21, 25 and 26 and added claim 27 which is dependent on claim 21 via claim 24.

The Applicant Argues:

The claims are allowable over the Short reference because of the newly amended limitations and the limitation of ‘separating the dependencies, preferences, constraints, events and policies’ into a first and second group.

In response, the examiner respectfully submits:

As argued last time, the Short reference teaches the two groups of resources denoted most clearly in Figure 3. Figure 3 as detailed in the Short specification starting col. 4, line 55 teaches a cluster service (tag 70) that controls and manages the nodes of the cluster. Tag 62 denotes many of the resources, which have shown dependencies (col. 5, lines 46- col. 6, line 9). Short teaches the dynamically changing cluster events and policies group as the membership and status as a static resource that manages dependencies of the dynamic resources (Short: col. 5, lines 10-22). So group 1 is tags 63 sub 1 and 2 and the second group is tag 63 sub 3 and 4. Group one [the first rules based group] is interpreted to be physical resources that have physical dependencies as noted in col. 7, lines 50-col. 8, line 6. Group 2 [the second dynamically changing events based group] is interpreted to be the logic resources that are moved around between membership groups, software and independent resources, col. 8, lines 7-41.

Applicant did amend the claims but did not distinctly define in which the resources are separated. Applicant simply added limitations stating the resources have attributes of 1. qualities of service and 2. availability. The newly added attributes are not linked with the separating limitation of the claim that define what goes into that group. “A first rules based group” is broad and does not claim the argued limitations of ‘static or occasionally changing resources [though contradictory in definition] such as the type and quality. Therefore applicant is arguing unclaimed features. The examiner suggests using features of the remarks, (page 11) second paragraph in the claimed limitations qualifying the separation. There still is a discrepancy between what applicant argues and claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin R. Bruckart whose telephone number is (571) 272-3982. The examiner can normally be reached on 9:00-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on (571) 272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Benjamin R Bruckart

Examiner

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